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EXAMINER

SMITH, COURTNEY L

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2835

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/567,179
Filing Date: May 22, 2008
Appellant(s): SPEIER

William S. Francos, Reg. No. (38,456)
For Appellant

EXAMINER'S ANSWER

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This is in response to the appeal brief filed 08/15/2011 appealing the Office action mailed 02/07/2011.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 1-18.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

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(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

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(8) Evidence Relied Upon

20060261470

Schick

11-2006

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the Appellant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the Appellant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7, 10-15, are rejected under 35 U.S.C. 102(e) as being anticipated by **(Schick 2006/0261470)**.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

Regarding Claim 1, **Schick** discloses a thermally and electrically conductive apparatus **(Fig. 4)** to which one or more electronic devices **(412)** can be operatively connected, the apparatus comprising: a) a thermally conductive element **(416---Detailed Description 0059)** in thermal contact with the one or more electronic devices; and b) a multilayer coating system including three or more layers **(Detailed Description 0040 & 0050-- where the evaporator portion is coated with dielectric, and wherein dielectric coating is patterned to provide electrical traces with current for the electrical**

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device; Detailed Description 0042 & 0044 further discloses primary and secondary LED's that constitutes two electrical trace layers isolated by at least one electrically insulating dielectric), said three or more layers being a sequence of electrically insulating and electrically conductive layers integrally formed on a portion of the thermally conductive element **(as already set forth by Detailed Description 0040--evaporator portion coated with dielectric),** said electrically conductive layers providing one or more paths for supplying electric current to the one or more electronic devices **(Detailed Description 0040--traces for current supply to the devices; and 0059--where operative connection to a control system controlling the activation of the electronic devices).**

Regarding Claim 2, Schick discloses the thermally and electrically conductive apparatus **(Fig. 4)** according to claim 1, wherein one or more of the layers, of the multilayer coating system include circuit traces for connection of the one or more electronic devices thereto, thereby providing a means for controlling the one or more electronic devices individually or in one or more groups of electronic devices **(as already set forth in claim 1).**

Regarding Claim 3, Schick discloses the thermally and electrically conductive apparatus **(Fig. 4)** according to claim 1, wherein the thermally conductive element is electrically conductive and thereby capable of providing a path for supplying electric current to the one or more electronic devices **(as disclosed by Detailed Description**

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0040--where the evaporator portion is coated with dielectric material patterned to provide electrical traces for the supply of electrical current to the devices).

Regarding Claim 4, Schick discloses the thermally and electrically conductive apparatus (**Fig. 4**) according to claim 1, wherein one or more of the three or more layers of the multilayer coating system are formed by deposition (**as already set forth in Detailed Description 0050**). **Note:** 'deposition' is a method of manufacture and is not structurally distinguished from the prior art, and thus the prior art is a fully functional equivalent to the claimed structure as evidenced by meeting all of the claimed structural limitations thereof.

Regarding Claim 5, Schick discloses the thermally and electrically conductive apparatus (**Fig. 4**) according to claim 1, wherein the apparatus is coupled to a support structure (**support--as disclosed by Detailed Description 0032**) comprising a circuit carrier (**carrier---as disclosed by Detailed Description 0048**).

Regarding Claim 6, Schick discloses the thermally and electrically conductive apparatus (**Fig. 4**) according to claim 5, wherein the multilayer coating system is configured to matingly connect with the circuit carrier (**mating connection already set forth by Detailed Description 0032**), thereby providing one or more electrical connections between the support structure and the thermally and electrically conductive apparatus (**Detailed Description 0032---where the already disclosed thermally**

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conductive element has an external support with means for mating a secondary portion, which already constitutes electrical connectivity, as already disclosed by Detailed Description 0040).

Regarding Claim 7, Schick discloses the thermally and electrically conductive apparatus (**Fig. 4**) according to claim 6, wherein the thermally and electrically conductive apparatus is permanently connected to the support structure (**where the permanent connection is constituted by solder--Detailed Description 0067**). **Note: 'permanent connection' features are not asserted.**

Regarding Claim 10, Schick discloses the thermally and electrically conductive apparatus (**Fig. 4**) according to claim 5, wherein the support structure includes a heat dissipation system (**as disclosed by Detailed Description 0059-0060---where the already disclosed support structure is comprised of a thermal management system and is a heat pipe, and 0029 further discloses a peltier device**).

Regarding Claim 11, Schick discloses the thermally and electrically conductive apparatus (**Fig. 4**) according to claim 1, wherein the multilayer coating system is formed on an end of the thermally conductive element (**as set forth by Fig. 4, where the coating system is on an outer periphery of the thermally conductive element**).

Regarding Claim 12, Schick discloses the thermally and electrically conductive

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apparatus **(Fig. 4)** according to claim 1, wherein the multilayer coating system is formed on a side of the thermally conductive element **(as set forth by Fig. 4, where the coating system is on an outer periphery of the thermally conductive element)..**

Regarding Claim 13, Schick discloses the thermally and electrically conductive apparatus **(Fig. 4)** according to claim 1, wherein the multilayer coating system sheaths at least a portion of the thermally conductive element **(as set forth by Detailed Description 0040, where the thermally conductive element is coated by the layers).**

Regarding Claim 14, Schick discloses the thermally and electrically conductive apparatus **(Fig. 4)** according to claim 1, wherein the thermally conductive element is a passive thermal device selected from the group comprising heat pipe **(as disclosed by Detailed Description 0059-0060---where the thermally conductive element is a heat pipe, and further disclosed by 0029).**

Regarding Claim 15, Schick discloses the thermally and electrically conductive apparatus **(Fig. 4)** according to claim 1, wherein the thermally conductive element is an active thermal device selected from the group comprising thermoelectric cooler **(as disclosed by Detailed Description 0029---where the thermally conductive device is a peltier device).**

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Claims 8-9, and 16-18, are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over (**Schick 2006/0261470**).

Regarding Claim 8, Schick discloses the thermally and electrically conductive apparatus (**as disclosed by Detailed Description 0040**) according to claim 6, **except**, explicitly wherein the thermally and electrically conductive apparatus is removably connected to the support structure. However, **Schick--(Detailed Description 0067 discloses individual partitions of the apparatus can be affixed by being screwed or bolted, which constitutes a removable connection)** the thermally and electrically conductive apparatus is removably connected to the support structure. It would have been obvious to one having ordinary skill in the art at the time that the invention was made to provide the already disclosed apparatus of Schick with the removably connected apparatus of Schick-Detailed Disruption 0067 in order to reduce labor during maintenance of the apparatus, and further to allow for design flexibility in accordance to thermal management needs.

Regarding Claim 9, Schick discloses a thermally and electrically conductive apparatus (**Fig. 4**) according to claim 5, the thermally and electrically conductive apparatus (**as already set forth**), **except** explicitly wherein the thermally and electrically conductive apparatus is embedded within the support structure. However, **Schick** discloses apparatus 616-Fig. 6 is embedded within support structure (**where 616 is embedded in aperture 628 or support structure 622**). It would have been obvious to one having ordinary skill in the art at the time that the invention was made to provide the already

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disclosed apparatus of Schick with the embedded apparatus of Schick- in order to allow for effective thermal coupling to enhance the transfer of heat away from the electrical device.

Regarding Claims 16-18, Schick discloses the thermally and electrically conductive apparatus (**Fig. 4**) according to claim 1, wherein the thermally conductive element has a shape of a curved element/cylinder/curvilinear (**as depicted by Fig. 4, and otherwise set forth by Detailed Description 0060, where the thermally conductive element is formed into a hole**), and thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the thermally conductive element of Schick in shape of a curved element/cylinder/curvilinear, since the examiner takes Official Notice of the equivalence of the shape constituted by the thermally conductive element formed in the hole, as set forth at 0060 and the above mentioned shapes for their use art of cooling electrical components and the selection of any of these known equivalents to accomplish a desired heat transfer would be within the level of ordinary skill in the art.

(10) Response to Argument

Claims 1-7, and 10-15 have been rejected under 35 USC 102(e) as being unpatentable over Schick.

Regarding Claim 1; the Appellant argues that Schick does not disclose a multi-layer coating system including three or more layers being a sequence of electrically insulating and electrically conductive layers integrally formed on a

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portion of the thermally conductive element. The Examiner respectfully disagrees.

As an initial matter the term 'sequence' is defined by Merriam Webster as an 'order of succession or 'a continuous or connected series', and thus only asserting three or more layers being a sequence of electrically insulating and electrically conductive layers **does not explicitly denote that the sequence alternates** from electrically insulating to electrically conductive or even which layer is first. Going further, a 'layer' does not specifically denote a particular stacking direction, and thus may be considered, (i.e. horizontally layered and/or vertically layered).

In any case, Regarding Claim 1; the Examiner contends that Schick discloses a thermally conductive element 416-Fig. 4 and para. 0050 further discloses a sequence of substrate 410 is fabricated by metal 1st layer, coated by dielectric 2nd layer having electrical trace(s) constituting at least a 3rd layer deposited onto the dielectric coating substrate which provides electrical isolation there-between, and thus even the claim is not asserted in such a way to require an alternating (insulating, conductive) coating sequence; Schick hereby satisfies the claim.

Alternatively, Schick discloses at para. 0040 another sequence; wherein the thermally conductive element (evaporator-416) is coated with dielectric-1st layer, and patterned with electrical trace(s); whereas at least two respective traces denotes a 2nd and 3rd layer which are electrically isolated by the 1st dielectric layer, and hereby also satisfies the claim. Going further, the Examiner deems a third sequence is disclosed by Shick at para. 0049; wherein a metal core printed circuit board necessitates a metal core between dielectric layer(s), and thus

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satisfying the alleged alternating sequence of three layer(s). As such, 'coating and integrally forming' constitutes a method of manufacture and is not structurally distinguished from the prior art. (In re Johnson, 157 USPQ 670, 1968; In re Thorpe, 227 USPQ 964, 1985; **See MPEP 2113—Product by Process Claims**). It would have been obvious to one having ordinary skill in the art at the time that the invention was made that the disclosed structure of the prior art is a fully functional equivalent to the claimed structure as evidenced by meeting all of the claimed structural limitations thereof.

The Appellant further argues on page 6-7 that the Examiner also considers primary and secondary LED's as the claimed thermally conductive element. The Examiner disagrees. It is to be noted that the respective LED's are connected to the electrical traces and which are electrically isolated by the dielectric, and thus providing an example of a 3 layered sequence, where electrically conductive layers (trace(s)) providing one or more paths for supplying electric current to electronic devices (LED's), as claimed.

Regarding Claim(s) 8-9, 16-18; the Examiner contends that the claims depend from claim 1 which is appropriately rejected under 102(e), and likewise claims 8-9, 16-18 are also rejected under 102(e) and would qualify as prior art under 102(e). As such, the showing of 102(b) in the heading is clearly a typographical error and has been corrected. The Examiner further notes that the alleged 103(c) statement has failed to disqualify the reference since the statement does

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not explicitly state that *the subject matter and the claimed invention, were at the time the invention was made, commonly assigned*. The Examiner further notes that the 103(c) statement and/or the typographical error was only provided with the appeal and never set forth at any other time during prosecution. Otherwise, the rejection is maintained since no arguments have been presented to distinguish any claimed structural features.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/COURTNEY SMITH/

Primary Examiner, Art Unit 2835

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/JAYPRAKASH N GANDHI/
Supervisory Patent Examiner, Art Unit 2835

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